lacks finality as a convincing proof of the tritubercular tooth as a primitive Ungulate tooth.

Professor Osborn has ingeniously utilised certain deviations from the normal type of tooth structure (for the group) in favour of his strongly-urged opinions. If the stages of development have been as he suggests, a retrogression would naturally be in the inverse order; thus the " apparently ' triconodont[7] lower molar of *Thylacinus* '* may be interpreted as a retrogression from a tritubercular tooth. In the same way may be explained the triconodont teeth of Seals and of the Cetacean *ZetLglodon.* Finally, the modern Toothed Whales have retrograded into " haplodonty."

Embryological evidence has also been called in, and with some success, to contribute towards the proof of the tritubercular theory of teeth. Taeker has shown that in the Horse and the Pig, and some other Ungulates, there is first of all a single hillock or cusp, and that later the additional cones arise separately. An apparent stumbling-block raised by these investigations is that it is not always the protocone or its equivalent in the upper jaw which arises first, as it obviously ought to do phylogenetically. This, however, is not a final argument in either direction. We know from plenty of examples that ontogenetic processes sometimes do not correspond in their order with phylogenetic changes. Thus in the mammalian heart the ventricle divides before the auricle; and of course, phylogenetically, the reverse ought to occur, since a divided auricle precedes a divided ventricle. This method of development has, moreover, been interpreted otherwise. It has been held to signify that the complex teeth of mammals are indeed derived from simple cones but by the fusion of a number of those cones.

On the other hand there are the claims of the multituber-cular theory of the origin of mammalian teeth to be considered. The palaeontological evidence has been already, to some extent, utilised. The occurrence of such teeth among the possible fore-runners of mammals, and in some of the most primitive types of Mammalia, has been referred to. Senor Anieghino dwells upon

the sextubercular condition of many primitive mammals even belonging to the Eutheria. In a recent communication[1] he attempts to identify six tubercles in the molars of types belonging to a

[1] "On the Primitive Type of the Plcxodont Molars of Mammals," *Proc. Zcol. Soc.* 1899, p. 555.